IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of David E. Albrecht	:	
	:	Examiner: Alison K. Pickard
Serial No.: 09/443,793	:	
Filed: November 18, 1999	:	Art Unit: 3673
Title: FLANGE PLATES FOR FLUID PORT INTERFACES	:	
Attorney Docket No.: 505-02	:	

APPEAL BRIEF

Table of Contents

I. Real Party in Interest

The present application is not assigned. David E. Albrecht is the real party in interest.

II. Related Appeals and Interferences

The undersigned is aware of no related appeals or interferences.

III. Status of Claims

The pending claims are Claims 28-35.

Claims 1-27 have been cancelled.

Claims 28-35 have been rejected.

Appellant appeals from the final rejection of Claims 28-35.

IV. Status of Amendments

This application has been amended eight (8) times. All eight of the following amendments have been entered:

1. Amendment mailed June 26, 2001, and received by the Office on July 2, 2001;

2. Amendment mailed January 9, 2002, and received by the Office on February 21, 2002;

3. Amendment mailed June 24, 2002, and received by the Office on July 1, 2002;

4. Amendment mailed January 10, 2003, with a Request for Continued Examination, and received by the Office on January 17, 2003;

5. Amendment mailed July 28, 2003, and received by the Office on July 30, 2003;

6. Amendment mailed February 20, 2004, with a Request for Continued Examination, and received by the Office on February 24, 2004;

7. Amendment mailed June 15, 2005, with a Request for Continued Examination, following the filing of an Appeal, and received by the Office on June 17, 2005; and

8. Amendment mailed November 30, 2005, and received by the Office on December 5, 2005.

No Amendments have been submitted following the last final rejection, mailed March 21, 2006.

V. Summary of Claimed Subject Matter

The present invention relates to the field of high-pressure hydraulic fluid systems. The invention provides a sealing plate which creates a simple but fluid-tight interface between two fluid-handling components, such as valves, conduits, or other devices.

In brief, the sealing plate of the present invention holds an O-ring, such that two fluid components can be made to abut the O-ring, from opposite sides of the plate. In this way, fluid connection is established from one component to the other, without leakage of fluid to the outside. The O-ring extends around a support ring. An orifice in the support ring provides fluid communication between the pressurized hydraulic fluid, flowing from one component to the other, and the O-ring.

The claims on appeal relate to the embodiment shown in Figures 5C, 5D, and 5E of the present application. Because this embodiment is a modification of the embodiments shown in previous figures, only the feature added by the claimed embodiment is identified by a reference numeral in these figures. The other features of this embodiment are similar to those of the preceding embodiments. Therefore, in the following annotated summary, reference numerals from the preceding embodiments will be given where appropriate.

The present invention comprises a planar, one-piece plate (page 6, lines 16-24; Figures 1A and 1B, reference numeral 1) which has an opening (Figure 1A, reference numeral 3). The plate therefore defines a pair of surfaces which are parallel to each other (Figures 1A through 5E all show a plate defining two mutually parallel surfaces).

The sealing plate includes a non-threaded annular seal, namely an O-ring (page 6, line 25 through page 7, line 2; Figure 1B, reference numeral

5, and Figure 2B, reference numeral 11) which sits within the opening, and which extends around the entire boundary of the opening.

The annular seal extends around a non-threaded support ring (page 7, lines 14-20; Figures 2A and 2B, reference numeral 13). The support ring tends to prevent the annular seal from being drawn, pulled or sucked out, due to high-velocity fluid flow (as would happen in the prior art, as illustrated by Figure 4A).

The annular seal comprises the sole means of sealing two port faces of fluid handling components which abut the sealing plate, as is shown in Figure 3B. Figure 3B shows the sealing plate of the invention sandwiched between two fluid handling components 7, as described on page 7, lines 21-27.

The support ring further comprises one or more orifices (page 9, lines 6-18; Figures 5C, 5D, 5E, reference numeral 17) which provide a fluid connection between the opening 3 and the O-ring. As shown most clearly in Figures 5D and 5E, each orifice has a longitudinal axis that is generally parallel to the surfaces of the sealing plate.

An important feature of the invention is that each orifice has an end which is immediately adjacent to, and in fluid communication with, the main path for pressurized hydraulic fluid flow (page 9, lines 6-11; Figures 5D and 5E). Thus, the orifices communicate with dynamic fluid, i.e. pressurized hydraulic fluid which is moving from one component to the other.

The orifices address the problem of leakage of fluid around the side of the O-ring, by providing a controlled passage for fluid between the main flow channel and the underside of the O-ring. Also, the orifices provide for controlled loading and unloading of the O-ring, which is useful in situations where the pressure in the flow channel is fluctuating rapidly

and substantially.

The independent claims in this application are Claims 28 and 32. Claim 28 recites the sealing plate alone, and Claim 32 recites the combination which includes a fluid component abutting the sealing plate.

The following is a concise explanation of the subject matter of both of the above claims, with reference to the specification and drawings.

Claim 28

Claim 28 recites an apparatus for providing a non-threaded fluid seal between two port faces of components of a hydraulic fluid system, comprising:

a) a generally planar, one-piece plate (page 6, lines 16-24; Figures 1A and 1B, reference numeral 1), the plate having a plurality of bolt holes (Figure 1A, reference numeral 4) and an opening (Figure 1A, reference numeral 3), the opening having a boundary, the plate having a pair of surfaces which are parallel to each other (Figures 1A through 5E), the opening comprising a path for pressurized hydraulic fluid flow perpendicular to the plate (this path is most clearly apparent in Figure 3A, the flow pattern of which is similar to that of Figure 5, the claimed embodiment),

b) a non-threaded annular seal (page 6, line 25 through page 7, line 2; Figure 1B, reference numeral 5, and Figure 2B, reference numeral 11) disposed within the boundary of the opening, and extending around the entire boundary of the opening, and

c) a non-threaded support ring (page 7, lines 14-20; Figures 2A and 2B, reference numeral 13) disposed within the annular seal,

wherein the support ring includes at least one orifice (page 9, lines 6-18; Figures 5C, 5D, 5E, reference numeral 17) which provides a fluid connection between said opening and said annular seal,

wherein the annular seal comprises the sole means for providing a seal between said two port faces (see Figure 3B),

wherein the orifice has a longitudinal axis which is generally parallel to said surfaces (see Figures 5D and 5E),

and wherein the orifice comprises a passage having an end which is immediately adjacent to, and is in fluid connection with, said path for pressurized hydraulic fluid flow (page 9, lines 6-11; Figures 5D and 5E).

The only "means plus function" language in Claim 28 is the recitation that the annular seal comprises the "sole means for providing a seal between said two port faces". This feature is supported by Figure 3B, which shows that the O-ring 11 is the only element that seals the port faces of the illustrated fluid components 7.

Claim 32

Claim 32 recites an apparatus for providing a non-threaded fluid seal between two port faces of components of a hydraulic fluid system, comprising:

a) a generally planar, one-piece plate (page 6, lines 16-24; Figures 1A and 1B, reference numeral 1), the plate having a plurality of bolt holes (Figure 1A, reference numeral 4) and an opening (Figure 1A, reference numeral 3), the opening having a boundary, the plate having a pair of surfaces which are parallel to each other (Figures 1A through 5E), the

opening comprising a path for pressurized hydraulic fluid flow perpendicular to the plate (this path is most clearly apparent in Figure 3A, the flow pattern of which is similar to that of Figure 5, the claimed embodiment),

b) a non-threaded annular seal (page 6, line 25 through page 7, line 2; Figure 1B, reference numeral 5, and Figure 2B, reference numeral 11) disposed within the boundary of the opening, and extending around the entire boundary of the opening,

c) a non-threaded support ring (page 7, lines 14-20; Figures 2A and 2B, reference numeral 13) disposed within the annular seal, and

d) a fluid component (page 7, lines 21-27; Figure 3B, reference numeral 7) which abuts the plate,

wherein the support ring includes at least one orifice (page 9, lines 6-18; Figures 5C, 5D, 5E, reference numeral 17) which provides a fluid connection between said opening and said annular seal,

wherein the annular seal comprises the sole means for providing a seal between the plate and the fluid component (see Figure 3B),

wherein the orifice has a longitudinal axis which is generally parallel to said surfaces (see Figures 5D and 5E),

and wherein the orifice comprises a passage having an end which is immediately adjacent to, and is in fluid connection with, said path for pressurized hydraulic fluid flow (page 9, lines 6-11; Figures 5D and 5E).

The only "means plus function" language in Claim 32 is the recitation that the annular seal comprises the "sole means for providing a seal between the plate and the fluid component". This feature is supported by Figure 3B, which shows that the O-ring 11 is the only element that seals the space between the plate 15 and either fluid component 7.

VI. Grounds of Rejection to be Reviewed on Appeal

1. Whether Claims 28-30 and 32-34 are unpatentable under 35 U.S.C. §103, over Johnson (U.S. Patent No. 5,765,835) in view of Aichroth (U.S. Patent No. 3,167,322) in view of Jones (U.S. Patent No. 2,278,721).

2. Whether Claims 28-35 are unpatentable under 35 U.S.C. §103, over Aichroth (U.S. Patent No. 3,167,322) in view of Rode (U.S. Patent No. 3,561,793) in view of Jones (U.S. Patent No. 2,278,721).

VII. Argument

A. The Rejection of Claims 28-30 and 32-34 over Johnson in view of Aichroth, in view of Jones

1. Claims 28-30

a) Johnson is Non-Analogous Art

The patent to Johnson (U.S. Patent No. 5,765,835) relates to a waveguide, not to a pressurized hydraulic system. Johnson is thus non-analogous art.

A waveguide is a tube or pipe for transmission of electromagnetic energy. While the patent does speak of "pressure" applications, the pressure domain contemplated by Johnson is undoubtedly different from that of the field of pressurized hydraulic fluid systems. A hydraulic fluid system transmits a pressurized liquid, such as oil. A waveguide contains either a gas or a partial vacuum. In a waveguide, the gas does not flow; it is the electromagnetic energy which travels along the waveguide. In a hydraulic system, the pressurized liquid flows through the conduit. In short, a hydraulic system bears only superficial resemblance to a waveguide, and the two structures originate from separate and unrelated industries.

The Examiner has dismissed the above argument on the ground that the hydraulic fluid and hydraulic system are not positively claimed. The Examiner's statement is inaccurate. Claim 28 clearly recites that the opening in the plate comprises a path for pressurized hydraulic fluid flow. This is a structural feature. A waveguide, such as that shown in Johnson, does not have this feature. It does not define a path for pressurized hydraulic fluid flow. A waveguide is not built to handle a pressurized hydraulic liquid, such as oil. Thus, the context of the present invention

has been amply recited.

But there is a more basic reason why Johnson is not pertinent. Because Johnson deals with waveguides, and not with pressurized hydraulic fluid systems, a person of ordinary skill would not look to Johnson for a suggestion about solving a problem in the field of hydraulics. A worker in the art of pressurized hydraulic liquids would not have reason to consider the art of transmission of electronic signals. A system for handling a pressurized, moving liquid is entirely unlike a system for holding a stationary gas.

Therefore, Applicant submits that it would not have been obvious, under Section 103, to combine Johnson with references dealing with hydraulic fluid systems.

b) Jones is Not Pertinent to the Present Invention

The Examiner concedes that neither Johnson nor Aichroth discloses a support ring having an orifice, and therefore cites Jones for its teaching of an orifice.

Applicant submits that Jones is not applicable for the following reasons.

i) Jones Fails to Show an Orifice Adjacent to a Path for Pressurized Hydraulic Fluid Flow

The orifice of Jones does not meet the limitations of the claims. Specifically, Claims 28-30 recite that the orifice has an end which is immediately adjacent to, and in fluid connection with, the path for pressurized fluid flow defined by the opening in the plate.

In contrast, the orifice of Jones is far removed from the pressurized fluid flow.

In Jones, the pressurized fluid flow is from port 3 to port 2, or from port 2 to port 3. The orifices cited by the Examiner are located at the periphery of weld back-up ring 5.

In the present invention, the claimed orifice is in fluid connection with dynamic fluid, i.e. fluid that is flowing, in the steady-state condition. But the orifice of Jones is not in direct fluid connection with the flow of fluid between ports 2 and 3. Instead, the orifice of Jones is in fluid communication with static fluid.

The Examiner's response to the above distinction between static and dynamic fluid is that there must be some movement of the fluid in or near the orifice of Jones, and that therefore such orifice is near a "dynamic" fluid.

The Examiner has misunderstood the physics of the Jones device. Fluid cannot flow simply because there is pressure; a fluid will flow only when there is a pressure difference. Except for transient effects, there is no pressure differential in the region above the weld back-up ring 5, and in the orifices, of Jones, because these regions are completely closed off, and the fluid has nowhere to go. There may be a transient flow of fluid in the vicinity of the orifices of Jones, or there may be some minor recirculation of fluid at a molecular level, but such flows would be utterly negligible. In the steady state, the fluid in or near the orifices of Jones must be static.

By contrast, in the present invention, the fluid flowing past the orifice can be flowing continuously. That is, the claimed orifice is in contact with dynamic fluid.

Although the terms "static" and "dynamic" are not part of the claims, these concepts are implicated by the claims, insofar as the structure

recited in Claims 28-30 requires that the orifice be adjacent to a path for pressurized hydraulic fluid flow. Note that the claims first define the "path" as formed by the opening in the plate, such that pressurized hydraulic fluid flows perpendicular to the plate. The orifice is then required to be immediately adjacent to this path.

The claimed structure is entirely different from what is taught by Jones. The orifices in Jones are located far away from ports 2 and 3, and thus far away from any steadily-flowing pressurized hydraulic fluid.

ii) The Orifices of Jones Are Not Oriented in the Manner Required by the Claims

The present claims recite an orifice having a longitudinal axis which is generally parallel to the surfaces of the sealing plate. The orifices of Jones are not oriented in this manner.

As noted above, the main fluid flow, in Jones, is between ports or passages 2 and 3, which may connect with a pipeline (page 1, column 2, lines 45-48). Element 7 is a valve stem, not a fluid-containing pipe. Thus, the main flow of fluid is from left to right, or from right to left, through the large passage shown near the bottom of the valve. To the extent that any element corresponds to the sealing plate of the present invention, it must be the closure member 12, which opens or closes a fluid path between passages 2 and 3.

Just as the sealing plate of the present invention sits at the junction of two fluid components, the closure member 12 of Jones sits at the junction of two fluid passages.

The specific invention of Jones is shown mainly in Figures 2 and 4, both of which depict valve stem 7, which is the same component as in Figure 1. The valve stem defines a frame of reference for the drawings. Thus, it

is correct to assume that what is shown in Figures 2 and 4 has the same orientation as what is shown in Figure 1.

Figure 2 of Jones shows a pair of orifices 39, and the top view shown in Figure 4 shows six such orifices. These orifices have various orientations, but none of them is parallel to the closure member 12. Indeed, if one sought to form orifices that are parallel to the closure member, the orifices would need to be at the top and bottom of the diagram of Figure 4. But Figure 4 shows that an orifice is missing at both the top and the bottom. Instead, the components at these locations are connected by dowel pins 57.

Thus, in the present claimed invention, the orifice has a longitudinal axis which is generally parallel to the surfaces of the sealing plate. But in Jones, the various orifices are oriented in directions that are non-parallel to the closure member 12.

Not only does Jones fail to suggest the claimed geometrical relationship of the orifice of the present invention, but it suggests a variety of orientations, none of which matches what is recited in the claims! Appellant submits that, in this regard, Jones teaches directly away from the claimed invention.

The geometrical limitation in Claims 28-30 insures that fluid flowing through the orifice in the support ring will flow in a direction that is perpendicular to the main flow of fluid from one component to the other. Jones contains no such suggestion. The orifices of Jones not only are not located anywhere near the main flow of fluid, but even if one superimposed them on the main flow, they would not be perpendicular to the direction of the main fluid flow. In short, the present claimed invention contradicts the teachings of Jones.

Thus, while Jones shows an orifice in a gasket back-up ring, the

orifice does not point in the direction required by the present claims. The person of ordinary skill would not derive a suggestion, from Jones, of an orifice that is perpendicular to the main flow of fluid. For this reason alone, Appellant submits that Jones does not reasonably suggest the claimed features of the orifice.

iii) Jones Addresses a Problem Which is Entirely Different From That Solved by the Present Invention

The context of the invention of Jones, while it relates to fluid handling, differs radically from that of the present invention.

The present invention includes a sealing plate which sits between a pair of fluid components. The fluid components are brought into abutment with the sealing plate so as to provide a secure path for fluid flow from one component to the other. Thus, the sealing plate of the present invention is a permanent structure.

The orifice of Jones, by contrast, is a temporary structure. Jones discloses apparatus for testing a valve (see page 1, lines 1-17). The portions of Jones, which are relied upon by the Examiner, are components which are intentionally disabled after the valve has passed its test. Specifically, note that test pressure, in Jones, is transmitted through holes 72 (page 2, column 2, lines 70-72). But when the test is completed, and the bonnet is permanently joined to the body, the holes 72 are plugged with metal (page 3, column 1, lines 31-34).

Applicant submits that a person of ordinary skill, seeking to solve the problems addressed by the present invention, would not be likely to rely on a reference which teaches a temporary structure. The orifice of the present invention is, of necessity, permanently connected adjacent to

the main path for fluid flow. The orifice of Jones not only is not connected to the main fluid flow path, but is a temporary structure, intended to be disabled when the test is completed.

For this additional reason, Applicant submits that the person of ordinary skill would not be likely to consult Jones. The rejections which rely on Jones are therefore inappropriate under Section 103.

iv) The Examiner Overlooks the "Big Picture", and Engages in Impermissible Hindsight Reconstruction of the Invention

The Examiner may respond to the above by stating that Jones is cited only for its general suggestion of an apertured support ring, even though the majority of the teachings of Jones do not apply to the claimed device.

Appellant submits that such an argument constitutes reconstruction of the invention by selective hindsight, an exercise which is not permitted by the law, In re Dow Chemical Co., 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988). The Examiner's holding of obviousness is not based on practical reality, but only on hindsight reconstruction. There is really nothing in the references that suggests that they be combined as proposed.

In short, Jones cannot be logically combined with Johnson, because the two references are from disparate and non-analogous fields. But even if the references were combined, Jones does not suggest the placement of the orifice in the manner claimed in Claims 28-30, and thus the combination does not yield the claimed invention.

c) Aichroth Does Not Supply What is Missing in the Other References

The addition of the patent to Aichroth, to Johnson and Jones, does not change the above conclusion. Aichroth has been cited only for its showing of an O-ring having a circular shape. It does not teach or suggest the other structural features recited in the claims.

In summary, the combination of Johnson, Jones, and Aichroth is not proper under Section 103, because Johnson and Jones arise from non-analogous arts. A person of ordinary skill in the field of pressurized hydraulic liquids would not seek guidance from the field of waveguides, which are not intended to handle such liquids.

Even if the references were combined as proposed, their combination would still not yield what is presently claimed. In the present invention, the orifice in the support ring is immediately adjacent, and in direct communication with, the path for pressurized fluid flow. In Jones, the orifice is not so located. Moreover, the present claims require a geometry for the orifice which is neither shown nor suggested by Jones. Finally, the orifice of Jones is part of a temporary structure, and therefore would not suggest, to a person of ordinary skill, its inclusion in a permanent device.

It has been held that, in combining references under Section 103, the issue is what would be fairly suggested by the references, taken as a whole. Ex parte Storrs, 13 U.S.P.Q.2d 1390 (Bd. Pat. App. & Int. 1988); In re Kramer, 18 U.S.P.Q.2d 1415 (Fed. Cir. 1991). Applicant submits that the patent to Jones does not fairly suggest the claimed invention.

2. Claims 32-34

Claims 32-34 differ from Claims 28-30 in that Claims 32-34 positively recite a fluid component which abuts the sealing plate. Thus, Claims 32-34 recite a system which includes at least a sealing plate and a fluid component in abutment therewith.

The arguments made above, with respect to Claims 28-30, apply also to Claims 32-34, and are incorporated by reference here.

In addition, Applicant submits that, because Claims 32-34 explicitly recite the fluid component, there is even more reason to disregard Johnson, which deals with a waveguide. The Examiner has argued that Johnson is pertinent because the pending claims do not positively recite the components of the entire system. In Claims 32-34, not only do the claims recite a path for pressurized hydraulic fluid, but they also explicitly recite a fluid component which abuts the plate.

The above is another reason why the patent to Johnson is not pertinent, and should not be combined with Jones and Aichroth under 35 U.S.C. §103.

Therefore, Claims 32-34 are believed allowable over Johnson, Aichroth, and Jones, for all of the reasons given above.

B. The Rejection of Claims 28-35 over Aichroth in view of Rode, in view of Jones

For this ground of rejection, all of Claims 28-35 should be considered as a single group.

The present ground of rejection is based on Aichroth, in view of Rode, in view of Jones. In brief, the Examiner holds that the outer retainer 26 of Aichroth can be identified as the "plate" of the present invention, that Rode suggests forming bolt holes in this outer retainer, and that Jones suggests formation of an orifice in the inner retainer 24 of Aichroth.

The proposed combination is illogical and impractical, and therefore not warranted under Section 103, for the reasons explained below.

1. Aichroth Does Not Show a "Plate"

The Examiner identifies the outer retainer 26 as the "plate" recited in the claims.

The outer retainer is not a "plate". It is a thin member, serving as a retainer for the O-ring 22.

Aichroth gives specific information about the width of the outer retainer. The outer retainer is shown and described to be of lesser width than the O-ring (see column 2, lines 32-35; column 3, lines 36-37 ("[i]n all cases, the thickness of the retainer or retainers is less than the cross sectional diameter of the O-ring").

Furthermore, Aichroth gives specific suggested dimensions in the table and diagrams shown in Figures 10-12. By comparing columns A and B of Figure 12, in conjunction with the diagrams of Figures 10 and 11, one can deduce that the recommended width of the outer retainer is approximately one quarter inch.

While the Examiner has some latitude in assigning meanings to terms in

the claims, Applicant submits that, in this case, the Examiner's identification of the thin outer retainer as a "plate" is unreasonable.

It is settled law that terms in a patent application should be given their ordinary meaning. Optical Disc Corp. v. Del Mar Avionics, 54 U.S.P.Q.2d 1289, 1295 (Fed. Cir. 2000). A technical term in a patent document is interpreted as having the meaning understood by persons familiar with the field of the invention, unless the specification or prosecution history indicates otherwise, Hoechst Celanese Corp. v. BP Chems. Ltd., 38 U.S.P.Q.2d 1126, 1129 (Fed. Cir. 1996); K-2 Corp. v. Salomon S.A., 52 U.S.P.Q.2d 1001, 1004 (Fed. Cir. 1999) ("[t]he general rule is that terms in the claim are to be given their ordinary and accustomed meaning"). In the present case, the term "plate" must be given its ordinary meaning, which is a generally flat member. The term "plate" should not be interpreted so broadly as to encompass the outer retainer 26 of Aichroth. The outer retainer of Aichroth is not a plate.

2. It Would Not Be Practical or Desirable to Form Bolt Holes in Outer Retainer 26 of Aichroth

Even if the outer retainer 26 of Aichroth were deemed a "plate", the Examiner's combination of Aichroth and Rode would still not be warranted.

The Examiner holds that it would be obvious to provide bolt holes in the outer retainer 26 of Aichroth. But the Examiner's proposed combination is negated by Aichroth itself.

First, as explained above, the outer retainer 26 is narrower than the O-ring, and preferably has a width in the area of one quarter inch. It would be clearly impractical to form holes in such a narrow structure. To avoid weakening the outer retainer, the holes would have to be tiny, and probably insufficient to accommodate the heavy bolt needed in a pressurized

hydraulic system.

Secondly, Aichroth itself shows bolts 46, in Figure 5, and these bolts are clearly wider than the outer retainer 26. Indeed, Aichroth does not contemplate punching holes in the outer retainer, but instead provides bolts which extend through holes in closure member 44 and in hollow body 42.

A person of ordinary skill in the art would hardly be induced to form bolt holes in the outer retainer 26 of Aichroth. Aichroth itself suggests not to do so.

Therefore, to the extent that the outer retainer of Aichroth is deemed a "plate", it would not be obvious to form holes in that plate. On the contrary, to form such holes would be entirely illogical, impractical, and contrary to the specific teachings of the reference.

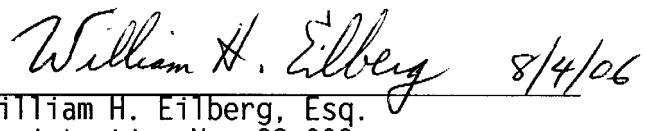
3. Jones is Not Applicable for the Reasons Given Previously

The Examiner has again cited Jones for its teaching of an orifice. The arguments regarding Jones, made above, are equally applicable here, and Applicant incorporates the above arguments by reference.

In summary, Aichroth cannot reasonably be interpreted to show the claimed "plate", because the narrow outer retainer is not a plate. But even if the outer retainer were deemed a plate, it would be undesirable, and certainly not obvious, to form holes in that member. Finally, the references do not suggest forming the claimed orifice in the inner retainer of Aichroth, for the same reasons given above, with respect to the other ground of rejection.

For the reasons given above, Appellant urges reversal of the Examiner's decision, and requests early allowance of the claims on appeal.

Respectfully submitted,



8/4/06

William H. Eilberg, Esq.
Registration No. 28,009
Three Bala Plaza
Suite 501 West
Bala Cynwyd, PA 19004
215-885-4600

Attorney for Appellant

VIII. Claims Appendix

The claims on appeal are as follows:

28. Apparatus for providing a non-threaded fluid seal between two port faces of components of a hydraulic fluid system, comprising:

a) a generally planar, one-piece plate, the plate having a plurality of bolt holes and an opening, the opening having a boundary, the plate having a pair of surfaces which are parallel to each other, the opening comprising a path for pressurized hydraulic fluid flow perpendicular to the plate,

b) a non-threaded annular seal disposed within the boundary of the opening, and extending around the entire boundary of the opening, and

c) a non-threaded support ring disposed within the annular seal,

wherein the support ring includes at least one orifice which provides a fluid connection between said opening and said annular seal,

wherein the annular seal comprises the sole means for providing a seal between said two port faces,

wherein the orifice has a longitudinal axis which is generally parallel to said surfaces,

and wherein the orifice comprises a passage having an end which is immediately adjacent to, and is in fluid connection with, said path for pressurized hydraulic fluid flow.

29. The apparatus of Claim 28, wherein the annular seal comprises a flexible O-ring, and wherein the support ring comprises a metal ring.

30. The apparatus of Claim 28, wherein the support ring has an outer

portion which faces an inner portion of the annular seal, and wherein the support ring is chamfered on said outer portion.

31. The apparatus of Claim 30, wherein the support ring has two chamfers, both chamfers making an angle of about 45° with an axis of the support ring.

32. Apparatus for providing a non-threaded fluid seal between two port faces of components of a hydraulic fluid system, comprising:

a) a generally planar, one-piece plate, the plate having a plurality of bolt holes and an opening, the opening having a boundary, the plate having a pair of surfaces which are parallel to each other, the opening comprising a path for pressurized hydraulic fluid flow perpendicular to the plate,

b) a non-threaded annular seal disposed within the boundary of the opening, and extending around the entire boundary of the opening,

c) a non-threaded support ring disposed within the annular seal, and

d) a fluid component which abuts the plate,

wherein the support ring includes at least one orifice which provides a fluid connection between said opening and said annular seal,

wherein the annular seal comprises the sole means for providing a seal between the plate and the fluid component,

wherein the orifice has a longitudinal axis which is generally parallel to said surfaces,

and wherein the orifice comprises a passage having an end which is immediately adjacent to, and is in fluid connection with, said path for pressurized hydraulic fluid flow.

33. The apparatus of Claim 32, wherein the annular seal comprises a flexible O-ring, and wherein the support ring comprises a metal ring.

34. The apparatus of Claim 32, wherein the support ring has an outer portion which faces an inner portion of the annular seal, and wherein the support ring is chamfered on said outer portion.

35. The apparatus of Claim 32, wherein the support ring has two chamfers, both chamfers making an angle of about 45° with an axis of the support ring.

IX. Evidence Appendix

There have been no items of evidence submitted, in this application, under Rules 130 or 131.

There has been one Declaration submitted under Rule 132, together with the Amendment mailed January 10, 2003. This Declaration relates primarily to the patent to Stone, which shows threaded seals. The Examiner no longer relies on the patent to Stone, so the Declaration under Rule 132 is not pertinent to this appeal.

X. Related Proceedings Appendix

The undersigned is aware of no related appeals or interferences.